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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/604,595	06/27/2000	Paul A. Underbrink	ST97001CI2 (209-US-CIP2)	5340

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EXAMINER	
ODOM, CURTIS B	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/604,595	UNDERBRINK ET AL.	
	Examiner	Art Unit	
	Curtis B. Odom	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-6,8-10,16,18-28 and 33-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *21,22,25,26,33 and 34* is/are allowed.

6)☒ Claim(s) *1,3-6,8-10,16,18-20,23,24,27,28,35 and 36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 June 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1, 3-6, 8-10, and 18-20 are objected to because of the following informalities:

   a. In the above claims, the word "ships" is suggested to be changed to "chips".

   b. In claim 16, "PON" is suggested to be changed to "PN".

Appropriate correction is required.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 4, 9, and 19 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility. Claims 1, 6, and 16 recite the limitations (or similar limitations) "a second multiplier coupled to the switch for **multiplying the selected portion of a second of the plurality of signal samples with the one of the plurality of PN code chips to obtain a second product, wherein the second of the plurality of signal samples succeeds the one of the plurality of signal samples; and a first adder coupled to the first multiplier and the second multiplier for adding the first product with the second product to obtain a first sum.** However, claims 4, 9, and 19, which depend directly on claims 1, 6, and 16, recite the limitations (or similar limitations) "a second multiplier coupled to the switch **for multiplying the selected**

portion of a second of the plurality of signal samples with a second of the of the plurality of PN code chips to obtain a second product, wherein the second of the plurality of signal samples succeeds the one of the plurality of signal samples and wherein the second of the plurality of PN code chips succeeds the one of the plurality of PN code chips; and a first adder coupled to the first multiplier and the second multiplier for adding the first product with the second product to obtain a first sum. Therefore, it would have been obvious to one skilled in the art at the time the invention was made that since the second product is defined as **multiplying the selected portion of a second of the plurality of signal samples with the one of the plurality of PN code chips to obtain a second product** in the independent claims (1, 6, and 16) that the second product recited in dependent claims 4, 9, and 19 could not be created as recited in the claim (**multiplying the selected portion of a second of the plurality of signal samples with a second of the of the plurality of PN code chips to obtain a second product**). Thus, claims 4, 9, and 19 lack utility.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 23, 24, 27, 28, 35 and 36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which

was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claims 23, 24, 27, 28, 35, and 36 recite the limitation "a fourth multiplier", or "multiplying...to obtain a fourth product", or "means for multiplying...to obtain a fourth product". However, the specification does not disclose a fourth multiplier or means for obtaining a fourth product coupled to a first switch for selecting one of the in-phase portion and the quadrature-phase portion and a second switch coupled to the first switch for selecting one of the even samples and the odd samples (see Fig. 9 and page 18, line 11-page 19, line 9 of the specification).

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 3, 5, 6, 8, 10, 16, 18, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Kawabe et al. (U. S. Patent No. 6, 377, 613).

Regarding claim 1, Kawabe et al. discloses a system for despreading a spread spectrum signal using a PN code (Fig. 16, block 2581), wherein the spread spectrum signal comprises a

plurality of signal samples, each signal sample having an in-phase portion and a quadrature-phase portion (column 11, lines 9-15), and wherein the PN code comprises a plurality of chips (column 11, lines 16-26), the system comprising:

a switch (Fig. 16, block 2509, column 11, lines 9-15) for selecting one of the in-phase portion and the quadrature-phase portion, wherein the multiplexer is a switch in that it switches between the in-phase and quadrature portions of the signal (see Fig. 17, 1703);

a first multiplier (Fig. 16, 2517, column 11, lines 3-27) coupled to the switch for multiplying the selected portion of one of the plurality of signal samples (I signal) with one of the plurality of PN code chips to obtain a first product (I code); and

a second multiplier (Fig. 16, 2518) coupled to the switch for multiplying the selected portion of a second of the plurality of signal samples (Fig. 17, I2) with the one of the plurality of PN code chips (Fig. 17, I-code) to obtain a second product, wherein the second of the plurality of signal samples (I2) succeeds the one of the plurality of signal samples; and

a first adder (Fig. 16, 2520) coupled to the first multiplier and the second multiplier for adding the first product with the second product to obtain a first sum, wherein the sum of products I signal x I code is accumulated (Fig. 16, II, calculation, column 11, lines 3-8 and column 11, lines 16-19).

Regarding claim 3, which inherits the limitations of claim 1, Kawabe et al. further discloses:

a third multiplier (Fig. 11, 1110-3, wherein Fig. 16 has the same structure as that of Fig. 11, see column 11, lines 16-19) coupled to the switch for multiplying the selected portion of a third of the plurality of signal samples (Fig. 17, I3 signal) with a second of the plurality of PN

code chips (shifted I-code, see column 4, lines 50-65) to obtain a third product, wherein the third of the plurality of signal samples succeeds the second of the plurality of signal samples and wherein the second of the plurality of PN code chips succeeds the one of the plurality of PN code chips (shifted PN code, see column 4, lines 50-65), wherein the PN code is shifted such that correlations are obtained between each sample and each PN code chip (column 4, line 66-column 5, line 4);

a fourth multiplier (Fig. 11, 1110-4) coupled to the switch for multiplying the selected portion of a fourth of the plurality of signal samples with the second of the plurality of PN code chips (shifted I-code, see column 4, lines 50-65, wherein the PN code is shifted such that correlation are obtained between each sample and each PN code chip, see column 4, line 66-column 5, line 4) to obtain a fourth product, wherein the fourth of the plurality of signal samples succeeds the third of the plurality of signal samples and wherein the third of the plurality of PN code chips succeeds the second of the plurality of PN code chips;

a second adder (Fig. 11, 1111-4) coupled to the third multiplier and the fourth multiplier for adding the third product with the fourth product to obtain a second sum; and

a third adder (Fig. 11, 1111-m) coupled to the first adder and the second adder for adding the first sum with the second sum.

Regarding claim 5, which inherits the limitations of claim 4, Kawabe et al. further discloses:

a third multiplier (Fig. 11, 1110-3, wherein Fig. 16 has the same structure as that of Fig. 11, see column 11, lines 16-19) coupled to the switch for multiplying the selected portion of a third of the plurality of signal samples (Fig. 17, I3 signal) with the second of the plurality of PN

code chips (shifted I-code, see column 4, lines 50-65) to obtain a third product, wherein the third of the plurality of signal samples (Fig. 17, I3) succeeds the second of the plurality of signal samples;

a fourth multiplier (Fig. 11, 1110-4) coupled to the switch for multiplying the selected portion of a fourth of the plurality of signal samples (Fig. 17, I4) with a third of the plurality of PN code chips (shifted PN code, see column 4, lines 50-65) to obtain a fourth product, wherein the fourth of the plurality of signal samples succeeds the third of the plurality of signal samples and wherein the third of the plurality of PN code chips succeeds the second of the plurality of PN code chips (shifted PN code, see column 4, lines 50-65), wherein the PN code is shifted such that correlations are obtained between each sample and each PN code chip, see column 4, line 66-column 5, line 4);

a second adder (Fig. 11, 1111-4) coupled to the third multiplier and the fourth multiplier for adding the third product with the fourth product to obtain a second sum; and

a third adder (Fig. 11, 1111-m) coupled to the first adder and the second adder for adding the first sum with the second sum.

Regarding claims 6, 8, and 10, the claimed method includes features corresponding to the above subject mentioned in the above rejection of claims 1, 3, and 5, which is applicable hereto.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 16, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawabe et al. (U. S. Patent No. 6, 377, 613) in view of Langberg et al. (previously cited in Office Action 6/9/2004).

Regarding claims 16, 18, and 20, Kawabe et al. discloses all of the subject matter as described in the previous rejection (see rejection of claims 1,3, and 5) except for the method written as a computer program product with a computer readable storage medium.

However, Langberg et al. teaches that the method and apparatus for a transceiver warm start activation procedure with precoding can be implemented in software stored in a computer-readable medium. The computer readable medium is an electronic, magnetic, optical, or other physical device or means that can contain or store a computer program for use by or in connection with a computer-related system or method (note column 3, lines 51-65). One skilled in the art at the time the invention was made would have clearly recognized that the method of Kawabe et al. would have been implemented into software. The implemented software would perform the same function of the hardware for less expense, greater adaptability, and greater flexibility. Therefore, it would have been obvious to have implemented the method as taught by Kawabe et al. into software in the same manner as taught by Langberg et al. (with regards to the computer readable medium) in order to reduce cost and improve the adaptability and flexibility of the communication system.

Allowable Subject Matter

10. Claims 21, 22, 25, 26, 33 and 34 allowable over prior art references because related references do not disclose selecting one of the in-phase or quadrature phase portions of a signal, selecting one the even or odd sample of the signal, and multiplying the selected portion of the selected sample with a PN code.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on 571-272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom
February 13, 2006

CHIEH M. FAN
SUPERVISORY PATENT EXAMINER